



# Gene Pulser® Electroprotocols

\* We recommend adapting this protocol to use the Gene Pulser electroporation buffer (catalog #165-2676, 165-2677), which increases cell viability and transfection efficiency in mammalian cell lines.

**Cell Type** Mammalian, adherent, suspension,  
**Species Used** Monkey, Vero, kidney cells; Human, C-4I, cervical carcinoma cells

**Molecules Electroporated** DNA: circular, 9.2kB, expression vectors

## Before the Pulse

**Cell growth medium** M199 (GIBCO/BRL, Sigma)

**Growth phase at harvest** 3 x 10<sup>(6)</sup> cells / ml

**Pre-pulse incubation** None

**Wash solution** M199

## The Pulse

**Electroporation Temperature** Room temperature  
**Electroporation Medium\*** M199

**Instruments Used** Gene Pulser® apparatus & Capacitance Extender

**Cell Density** 3 x 10<sup>(6)</sup> cells / ml

**Cuvette Gap** 0.4cm

**Volume of Cells** 0.3 ml / pulse

**Voltage** 0.250 kV

**DNA Concentration** 100 µg DNA / pulse

**Field Strength** 0.625 kV/cm

**DNA Resuspension Buffer** distilled water

**Capacitor** 500 µF

**Volume of DNA** 5 µl

**Resistor** (Pulse Controller) Ω none

**Time Constant** Not given

## After the Pulse

**Outgrowth Medium** M199 - DMEM /F12,5% FBS,5% serum supplement, 1% pen/ strep, 400 µg G418

### Relevant Publications and/or Comments

**Note:** exponential values designated in parentheses.

**Outgrowth Temperature** 37°C

**Length of Incubation** 24 hours recovery before selection

**Selection Method or Assay Used** G418

**Electroporation Efficiency** 1.3 / µg DNA

**Per Cent Survival** Not given

**Name of Submitter**  
**Institution Address**

**Telephone Number**

**Fax Number**

**Date Submitted** 8/24/91

**Survey Number** 155

© Bio-Rad Laboratories, 1993